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20MCA31

Third Semester MCA Degree Examination, July/August 2022
Data Analytics Using Python

Time: 3 hrs.   Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1   a.   Write a note on:
        (i)   Keywords in Python.
        (ii)   Order of operations.   **(10 Marks)**
    b.   Write a program to prompt for a score between 0.0 and 1.0. If the score is out of range, print as error message. If the score is between 0.0 and 1.0, print a grade using the following table:

Score	Grade
>=0.9	A
>=0.8	B
>=0.7	C
<0.7	F

                                                                            (10 Marks)

OR

2   a.   Explain the following :
        (i)   Arguments *args and **kwargs   **(05 Marks)**
        (ii)   Continue and break statements.   **(05 Marks)**
    b.   With an example, explain how to define and call a user defined function in python.
                                                                            (10 Marks)

Module-2

3   a.   (i)   Write a note on slicing of a list.   **(04 Marks)**
        (ii)   Write a python program to insert an element into the sorted list.   **(06 Marks)**
    b.   (i)   Explain the following about strings is python.
             • Creation
             • Accessing the character one at a time.   **(04 Marks)**
        (ii)   Any 3 string methods.   **(06 Marks)**

OR

4   a.   Explain encapsulation, polymorphism and inheritance in python with example.   **(10 Marks)**
    b.   What is a file? What are the different way(modes) of opening a file?   **(10 Marks)**

Module-3

5   a.   What are the four pieces of information that a python integer contains? With a diagram show the difference between C and Python integer.   **(10 Marks)**
    b.   Write a note on attributes of arrays in NumPy.   **(10 Marks)**

OR

6   a.   What is broadcasting in Numpy arrays? Give example.   **(10 Marks)**
    b.   Write a note on aggregation functions available in Numpy with example.   **(10 Marks)**

Module-4

7 a. How to read a text file in pieces? Explain with example.   (10 Marks)
   b. Write a note on interacting with databases.   (10 Marks)

OR

8 a. What are the built-in ways in which,
       (i)   Data contained in pandas objects can be combined together?   (06 Marks)
       (ii)   Show an example of merging data on index.   (04 Marks)
   b. Write a note on string manipulation using the regular expression methods.   (10 Marks)

Module-5

9 a. What is Matplotlib? Write a python program to draw a basic plot and save the figure to a file using Matplotlib.   (10 Marks)
   b. What are scatter plots? Write a python program to plot it.   (10 Marks)

OR

10 a. Differentiate between Matplotlist and seaborn. Write code to plot a line plot and histogram in seaborn.   (10 Marks)
   b. Write a note on multiple subplots with examples.   (10 Marks)

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